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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,873	03/18/2002	Paul Jung	7524.24USWO	8884
23552	7590	04/18/2003		
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER MCHENRY, KEVIN L	
			ART UNIT 1725	PAPER NUMBER

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/937,873	JUNG ET AL.	
	Examiner	Art Unit	
	Kevin L McHenry	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) 7 and 8 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 March 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____                                     |

### ***Specification***

1. The disclosure is objected to because of the following informalities:

On page 2, line 24, the specification refers to the claims.

On page 2, line 29, the specification refers to the claims.

On page 3, line 4, the specification refers to the claims.

On page 3, line 6, the specification refers to the claims.

On page 3, lines 14-15, a heading “BRIEF DESCRIPTION OF THE DRAWINGS” is needed.

On page 3, lines 18-19, a heading “DESCRIPTION OF PREFERRED EMBODIMENTS” is needed.

Appropriate correction is required.

### ***Claim Objections***

2. Claims 7 and 8 are objected to because of the following informalities:

Claims 7 and 8 use the language “temperatures are separate”. The language “temperatures are different” is more appropriate.

In claim 8, line 1, the word characterized is misspelled.

In claim 8, line 2, the word plunger is misspelled.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 and 8 cite that a valve is connected to a hydraulic element by a plunger rod so that “their temperatures are separate”. It is unclear which temperatures are being considered; the temperatures of the valve and the hydraulic element or the temperatures of the valve, hydraulic element, and the plunger rod. For examination purposes the examiner interpreted this language to mean that “temperatures of the valve and the hydraulic element are different”.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 02-151,358.

JP 02-151,358 teaches a vacuum die casting process for casting metals that uses a mold with a mold cavity and an injection channel connected to a casting chamber or sleeve. The mold cavity and injection channel are sealed from the casting chamber by a piston that is driven by a damper, or hydraulic cylinder, and acts as a valve that closes

off the opening of the casting chamber on the end opposite a casting plunger. The end of the casting chamber that meets with the piston has a seat for accepting the piston so that the piston and the seat seal the end of the casting chamber shut. JP 02-151,358 teaches that when the casting chamber is sealed shut a vacuum means is used to draw a vacuum in the casting chamber and injection channel through an evacuation passage. During evacuation the sleeve is filled with molten metal and the casting plunger is advanced towards the sealed end of the casting chamber so that the chamber is gradually filled with molten metal. Once the chamber is filled with molten metal it is effectively evacuated. Since the piston that functions as a valve is in contact with molten metal charges and is separated from the damper, which is not in contact with molten metal, by a plunger rod the temperatures of the piston and the damper would be different (see JP 02-151,358; particularly Figures 1-4; abstract).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 04-178,254, JP 03-151,155, JP 03-151,154, and Ota et al. are cited of interest for illustrating the state of the art in vacuum die casting. Fields et al. (U.S.P. 5,246,055) is cited of interest for illustrating the state of the art in casting chamber seals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin L McHenry whose telephone number is (703) 305-9626. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



August 24, 2004

KILEY S. STONER  
PRIMARY EXAMINER



Kiley Stoner 8/24/04